

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 14 September 2000 (14.09.00)	Applicant's or agent's file reference PF-0643 PCT
International application No. PCT/US99/27566	Priority date (day/month/year) 19 November 1998 (19.11.98)
International filing date (day/month/year) 19 November 1999 (19.11.99)	
Applicant YUE, Henry et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

06 June 2000 (06.06.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer</p> <p>S. Mafla</p> <p>Telephone No.: (41-22) 338.83.38</p>
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/12, 5/10, C07K 14/705, 16/28, C12Q 1/68, G01N 33/50, A61K 38/17		A2	(11) International Publication Number: WO 00/29583
			(43) International Publication Date: 25 May 2000 (25.05.00)
(21) International Application Number: PCT/US99/27566 (22) International Filing Date: 19 November 1999 (19.11.99) (30) Priority Data: Not furnished 19 November 1998 (19.11.98) US 60/113,635 22 December 1998 (22.12.98) US 60/128,194 7 April 1999 (07.04.99) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications US 60/113,635 (CIP) Filed on 22 December 1998 (22.12.98) US 60/128,194 (CIP) Filed on 7 April 1999 (07.04.99) US Not furnished (CIP) Filed on 19 November 1998 (19.11.98) US 09/195,853 (CIP) Filed on 19 November 1998 (19.11.98) (71) Applicant (for all designated States except US): INCYTE PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).		(72) Inventors; and (75) Inventors/Applicants (for US only): YUE, Henry [US/US]; 826 Lois Avenue, Sunnyvale, CA 94087 (US). TANG, Y., Tom [CN/US]; 4230 Ranwick Court, San Jose, CA 95118 (US). CORLEY, Neil, C. [US/US]; 1240 Dale Avenue #30, Mountain View, CA 94040 (US). GUEGLER, Karl, J. [CH/US]; 1048 Oakland Avenue, Menlo Park, CA 94025 (US). GORGONE, Gina, A. [US/US]; 1253 Pinecrest Drive, Boulder Creek, CA 95006 (US). BAUGHN, Mariah, R. [US/US]; 14244 Santiago Road, San Leandro, CA 94577 (US). LU, Dyung, Aina, M. [US/US]; 55 Park Belmont Place, San Jose, CA 95136 (US). LAL, Preeti [IN/US]; 2382 Lass Drive, Santa Clara, CA 95054 (US). HILLMAN, Jennifer, L. [US/US]; 230 Monroe Drive #12, Mountain View, CA 94040 (US). YANG, Junming [CN/US]; 7136 Clarendon Street, San Jose, CA 95129 (US). (74) Agents: BILLINGS, Lucy, J. et al.; Incyte Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published Without international search report and to be republished upon receipt of that report.	
(54) Title: IMMUNOGLOBULIN SUPERFAMILY PROTEINS			
(57) Abstract			
The invention provides human immunoglobulin superfamily proteins (IGFAM) and polynucleotides which identify and encode IGFAM. The invention also provides expression vectors, host cells, antibodies, agonists, and antagonists. The invention also provides methods for diagnosing, treating, or preventing disorders associated with expression of IGFAM.			

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DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C12N5/10 C07K14/705 C07K16/28 C12Q1/68
G01N33/50 A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K C12Q G01N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE GENBANK [Online] Accession No. Y14736, 8 January 1998 (1998-01-08) PATERSON T.: ". sapiens mRNA for immunoglobulin kappa light chain" XP002132529 identical to seq. ID 20</p> <p>---</p>	1-16,19
X	<p>WO 97 49809 A (ROTKREUZSTIFTUNG ZENTRALLAB ;MIESCHER SYLVIA (CH); VOGEL MONIQUE () 31 December 1997 (1997-12-31) abstract seq. IDs 8,20</p> <p>---</p> <p>-/-</p>	1-16,19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

8 March 2000

Date of mailing of the international search report

26. 06. 2000

Name and mailing address of the ISA

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Fax: (+31-70) 340-3016

Authorized officer

Galli, I

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 23613 A (CELLTECH THERAPEUTICS LTD ;BEBBINGTON CHRISTOPHER ROBERT (GB); LAW) 3 July 1997 (1997-07-03) abstract seq. IDs 33,37,39,41,43 ---	1-16,19
X	WO 97 08320 A (MORPHOSYS PROTEINOPTIMIERUNG ;KNAPPIK ACHIM (DE); PACK PETER (DE);) 6 March 1997 (1997-03-06) abstract seq. IDs 14,28,43,166 ---	1-16,19
X	WO 98 11241 A (VON HOEGEN ILKA ;BRUEMMER WOLFGANG (DE); MERCK PATENT GMBH (DE); B) 19 March 1998 (1998-03-19) abstract seq. ID 4 ---	1-16,19
X	WO 97 42329 A (COPLEY CLIVE GRAHAM ;EMERY STEPHEN CHARLES (GB); ZENECA LTD (GB);) 13 November 1997 (1997-11-13) abstract seq. IDs 17,52,97,99 ---	1-16,19
X	EP 0 737 747 A (BEHRINGWERKE AG) 16 October 1996 (1996-10-16) abstract seq. ID 6 ---	1-16,19
A	WO 98 02462 A (NIEBA LARS ;HONEGGER ANNEMARIE (CH); PLUECKTHUN ANDREAS (CH); MORP) 22 January 1998 (1998-01-22) abstract ---	1-16,19
A	COLONNA M ET AL: "CLONING OF IMMUNOGLOBULIN-SUPERFAMILY MEMBERS ASSOCIATED WITH HLA-CAND HLA-B RECOGNITION BY HUMAN NATURAL KILLER CELLS" SCIENCE,US,AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,, vol. 268, 21 April 1995 (1995-04-21), pages 405-408, XP002067321 ISSN: 0036-8075 abstract --- -/--	1-16,19

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>LI S ET AL: "A COMPUTER SCREENING APPROACH TO IMMUNOGLOBULIN SUPERFAMILY STRUCTURES AND INTERACTIONS: DISCOVERY OF SMALL NON-PEPTIDIC CD4 INHIBITORS AS NOVEL IMMUNOTHERAPEUTICS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA,US,NATIONAL ACADEMY OF SCIENCE. WASHINGTON, vol. 94, 1 January 1997 (1997-01-01), pages 73-78, XP000619663 ISSN: 0027-8424 abstract</p> <p>-----</p>	1-16,19

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PF-0643 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 99/ 27566	International filing date (day/month/year) 19/11/1999	(Earliest) Priority Date (day/month/year) 22/12/1998
Applicant INCYTE PHARMACEUTICALS, INC. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☐

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☒

contained in the international application in written form.

☒

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority in written form.

☐

furnished subsequently to this Authority in computer readable form.

☐

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

☒

the text is approved as submitted by the applicant.

☐

the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒

the text is approved as submitted by the applicant.

☐

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.☐

as suggested by the applicant.

☐

because the applicant failed to suggest a figure.

☐

because this figure better characterizes the invention.

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☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/27566

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 19,20 are directed to a method of treatment of the human/animal body.
The search, if at all possible, has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 17,18,20
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
see additional sheet, invention 1.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/27566

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Claims 19,20 are directed to a method of treatment of the human/animal body.
The search, if at all possible, has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 17,18,20
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see additional sheet, invention 1.

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 17,18,20

Claims 17,18,20 refer to agonists and antagonists of the polypeptides claimed without giving a true technical characterization. Moreover, no such compounds are defined in the application. In consequence, the scope of said claims is ambiguous and vague, and their subject-matter is not sufficiently disclosed and supported (Art. 4 and 5 PCT). No search can be carried out for such purely speculative claims whose wording is, in fact, a mere recitation of the results to be achieved.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: (1-20) - partially

A substantially purified polypeptide comprising the amino acid sequence of seq ID 1 or fragments thereof.

Corresponding nucleic acids (seq. ID 20), vectors, recominant host cells, screening and detection methods, antibodies, antagonists and agonists, pharmaceutical compositions; therapeutic uses thereof.

2. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 2 and 21.

3. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 3 and 22.

4. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 4 and 23.

5. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 5 and 24.

6. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 6 and 25.

7. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 7 and 26.

8. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 8 and 27.

9. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 9 and 28.

10. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 10 and 29.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

11. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 11 and 30.

12. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 12 and 31.

13. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 13 and 32.

14. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 14 and 33.

15. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 15 and 34.

16. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 16 and 35.

17. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 17 and 36.

18. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 18 and 37.

19. Claims: (1-20) - partially

Idem as subject-matter 1, but limited to seq. IDs 19 and 38.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/27566

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C12N5/10 C07K14/705 C07K16/28 C12Q1/68
 G01N33/50 A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K C12Q G01N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

8 March 2000

Date of mailing of the international search report

26.06.2000

Name and mailing address of the ISA

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 Fax: (+31-70) 340-3016

Authorized officer

Galli, I

INTERNATIONAL SEARCH REPORT

Inter national Application No

PCT/US 99/27566

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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X	WO 97 23613 A (CELLTECH THERAPEUTICS LTD ;BEBBINGTON CHRISTOPHER ROBERT (GB); LAW) 3 July 1997 (1997-07-03) abstract seq. IDs 33,37,39,41,43 ---	1-16,19
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X	EP 0 737 747 A (BEHRINGWERKE AG) 16 October 1996 (1996-10-16) abstract seq. ID 6 ---	1-16,19
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A	COLONNA M ET AL: "CLONING OF IMMUNOGLOBULIN-SUPERFAMILY MEMBERS ASSOCIATED WITH HLA-CAND HLA-B RECOGNITION BY HUMAN NATURAL KILLER CELLS" SCIENCE,US,AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,, vol. 268, 21 April 1995 (1995-04-21), pages 405-408, XP002067321 ISSN: 0036-8075 abstract --- -/--	1-16,19

INTERNATIONAL SEARCH REPORT

Inter. Appl. No.
PCT/US 99/27566

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/27566

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9749809 A	31-12-1997	AU 3342397 A	14-01-1998
		BG 103016 A	31-08-1999
		BR 9709958 A	10-08-1999
		CA 2258494 A	31-12-1997
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		EP 0920509 A	09-06-1999
		HU 9902605 A	29-11-1999
		NO 986088 A	24-02-1999
		PL 330794 A	07-06-1999
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WO 9708320 A	06-03-1997	AU 6874596 A	19-03-1997
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

WIPO

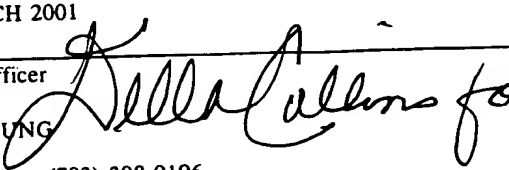
PCT

Applicant's or agent's file reference PF-0643 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/27566	International filing date (day/month/year) 19 NOVEMBER 1999	Priority date (day/month/year) 19 NOVEMBER 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): C07H 21/04 and US Cl.: 536/23.5		
Applicant INCYTE PHARMACEUTICALS, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 06 JUNE 2000	Date of completion of this report 06 MARCH 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer MARY TUNG 
Facsimile No. (703) 305-3230	Telephone No. (703) 308-0196

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/27566

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed☒ the description:pages 1-72, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____☒ the claims:pages 73-74, as originally filedpages NONE, as amended (together with any statement) under Article 19pages NONE, filed with the demandpages NONE, filed with the letter of _____☒ the drawings:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____☒ the sequence listing part of the description:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/27566

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims <u>none</u>	YES
	Claims <u>1-16</u>	NO
Inventive Step (IS)	Claims <u>none</u>	YES
	Claims <u>1-16</u>	NO
Industrial Applicability (IA)	Claims <u>1-16</u>	YES
	Claims <u>none</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1-6, 8-14 and 16 lack novelty under PCT Article 33(2) as being anticipated by WO 97/23613.

The WO 97/23613 patent teaches protein and nucleic acid sequences with apparent homology to the claimed sequences of SEQ ID NOS: 1-38, and fragments which anticipates the claimed invention, absent evidence to the contrary. The '613 patent teaches the recited amino acid sequences (claims 1 and 2), nucleic acid sequences (claims 3-6 and 9-11), an expression vector and host cell (see pages 9 and 10 of the '613 patent), as recited in claims 12 and 13, a method for producing a polypeptide, as recited in claim 14 (see page 24) and an antibody to said polypeptide (see pages 24 and 34), as recited in claim 16. It is noted that this opinion is based upon the art provided by the searching authority and not upon a sequence search performed by the Preliminary Examining Authority, since a sequence listing in computer readable form was not available to the Preliminary Examining Authority.

Claims 1-7 lack an inventive step under PCT Article 33(3) as being obvious over WO 97/23613.

The '613 patent was discussed, *supra*. One of ordinary skill in the art would have been motivated to detect the polynucleotide taught in the '613 patent by hybridizing and detecting a nucleic acid, as was well-known in the art at the time the invention was made. RNA or DNA could have been detected in order to measure the amount of transcription (RNA) or the incorporation of the DNA into the cellular genome. Therefore the invention of claim 7 would have been prima facie obvious at the time the invention was made, absent evidence to the contrary. It is noted that this opinion is based upon the art provided by the searching authority and not upon a sequence search performed by the Preliminary Examining Authority, since a sequence listing in computer readable form was not available to the Preliminary Examining Authority.

Claims 1-14 lack novelty under PCT Article 33(2) as being (Continued on Supplemental Sheet.)

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Sheet 10

Continuation of: Boxes I - VIII

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):
anticipated by WO 98/11241.

The WO 98/11241 patent teaches protein and nucleic acid sequences with apparent homology to the claimed sequences of SEQ ID NOS: 1-38, and fragments which anticipates the claimed invention, absent evidence to the contrary. The '241 patent teaches the recited amino acid sequences (claims 1 and 2), nucleic acid sequences (claims 3-6 and 9-11), a method of detecting a polynucleotide, (see page 31), an expression vector and host cell (see pages 7-10 of the '241 patent), as recited in claims 12 and 13, and a method for producing a polypeptide, as recited in claim 14 (see page 25 and claim 15). It is noted that this opinion is based upon the art provided by the searching authority and not upon a sequence search performed by the Preliminary Examining Authority, since a sequence listing in computer readable form was not available to the Preliminary Examining Authority.

Claims 1-15 lack novelty under PCT Article 33(2) as being anticipated by WO 97/42329.

The WO 97/42329 patent teaches protein and nucleic acid sequences with apparent homology to the claimed sequences of SEQ ID NOS: 1-38, and fragments which anticipates the claimed invention, absent evidence to the contrary. The '329 patent teaches the recited amino acid sequences (claims 1 and 2), nucleic acid sequences (claims 3-6 and 9-11), a method of detecting a polynucleotide, (see pages 39-41), an expression vector and host cell (see pages 8 and 9 of the '329 patent), as recited in claims 12 and 13, and a method for producing a polypeptide, as recited in claim 14 (see page 9) and pharmaceutical composition comprising said polypeptides (see page 41 and claim 12), as recited in claim 16 of the instant application. It is noted that this opinion is based upon the art provided by the searching authority and not upon a sequence search performed by the Preliminary Examining Authority, since a sequence listing in computer readable form was not available to the Preliminary Examining Authority.

The Preliminary Examining Authority acknowledges the filing of a response by applicants, received 14 February 2001. The Response does not overcome the concerns of the Written Opinion, and therefore the opinion stands as unchanged.

----- NEW CITATIONS -----
NONE